TA-5650

≃ WEGA V 480 USA Model
Canada Model
UK Model
AEP Model

Discard TA-5650 service manual previously issued for UK and AEP Models.
This service manual contains former information.

INTEGRATED STEREO AMPLIFIER

SPECIFICATIONS

GENERAL

Power Requirements: 120 V ac, 60 Hz (USA and Canada Model)
110, 127, 220 or 240 V ac adjustable, 50/60 Hz (UK and AEP Model)

Power Consumption: 160 W (USA Model)
320 VA (Canada Model)
440 W (UK and AEP Model)

Dimensions: Approx. 460(w) x 168(h) x 323(d) mm
$18\frac{1}{8}$(w) x $6\frac{5}{8}$(h) x $12\frac{3}{4}$(d) inches
Including projecting parts and controls

Weight: Approx. 13.4 kg, 29 lb 9 oz (net)
Approx. 16 kg, 35 lb 4 oz (in shipping carton)

POWER AMPLIFIER SECTION

Continous RMS Power Output: (less than 0.1 % THD, both channels driven simultaneously)
At 1 kHz
60 + 60 W (8 Ω)
50 + 50 W (4 Ω)
At 20 Hz – 20 kHz
50 + 50 W (8 Ω)
according to DIN 45500
55 + 55 W (8 Ω)

Dynamic Power Output: (IHF constant power supply method)
160 W (8 Ω)
140 W (4 Ω)

Power Bandwidth (IHF): 5 – 40,000 Hz

Harmonic Distortion: Less than 0.1 % at rated output
Less than 0.08 % at 1 W output

IM Distortion: (60 Hz : 7 kHz = 4 : 1)
Less than 0.1 % at rated output
Less than 0.08 % at 1 W output

Frequency Response (at 1 W output): 2 Hz – 100 kHz $^{+0}_{-2}$ dB

S/N Ratio: Greater than 110 dB, short-circuited input

Residual Noise: Less than 0.02 μW (8 Ω)

Damping Factor: 50 (8 Ω, at 1 kHz)

Inputs: POWER INPUT
Sensitivity 1 V RMS (for rated output), impedance 50 kΩ

Outputs: SPEAKER terminals A, B
Accept speakers of 4 Ω or more
HEADPHONES jack
Accepts low-and high-impedance stereo headphones

– continued on page 2 –

0 dB = 0.775 V

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PREAMPLIFIER SECTION

Harmonic Distortion: Less than 0.05 % at rated output

IM Distortion: (60 Hz : 7 kHz = 4 : 1) Less than 0.05 % at rated output

Frequency Response: PHONO 1, 2 RIAA equalization ±0.5 dB

TUNER, AUX 1, 2, 3, TAPE 1, 2, REC/PB (input), EXT ADPT 1, 2 (input): 10 Hz – 100 kHz $^{+0}_{-2}$ dB (TONE: CANCEL)

Tone Controls:
BASS:
±10 dB at 50 Hz (TURNOVER 250 Hz)
±10 dB at 100 Hz (TURNOVER 500 Hz)
TREBLE:
±10 dB at 10 kHz (TURNOVER 2.5 kHz)
±10 dB at 20 kHz (TURNOVER 5 kHz)

Filters:
LOW:
12 dB/octave attenuation below 30 Hz
HIGH:
12 dB/octave attenuation above 9 kHz

Loudness switch: (att. 30 dB)
+ 10 dB at 50 Hz
+ 3 dB at 10 kHz

Inputs:

	Sensitivity	Impedance	Maximum input capability*	S/N (weighting network)
PHONO 1, 2	2.5 mV	50 k ohms	300 mV	greater than 70 dB (B)
AUX 1, 2, 3 TAPE 1, 2 REC/PB (input) EXT ADPT 1, 2(input)	150mV	250k ohms	—	greater than 90 dB (A)

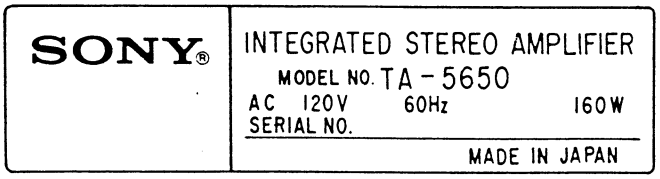
* The maximum input capability is measured at a 0.05 % harmonic distortion.

Outputs:

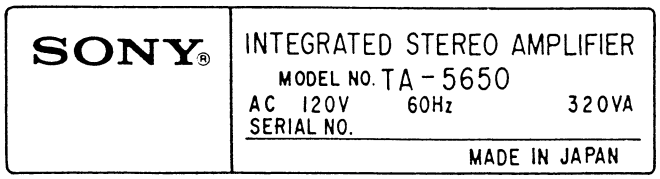
	Output voltage	Impedance
REC OUT 1, 2	150 mV	4.7 k ohms
PRE OUTPUT	1 V	1 k ohm
REC/PB	17 mV	82 k ohms
EXT ADPT 1, 2	150 mV	4.7 k ohms

Specification Labels:

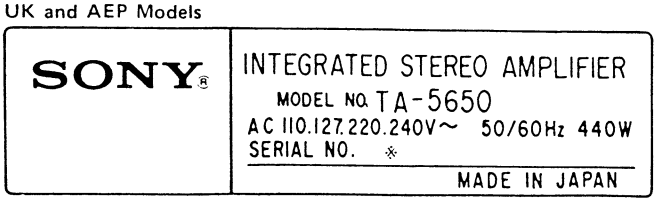
USA Model



Canada Model

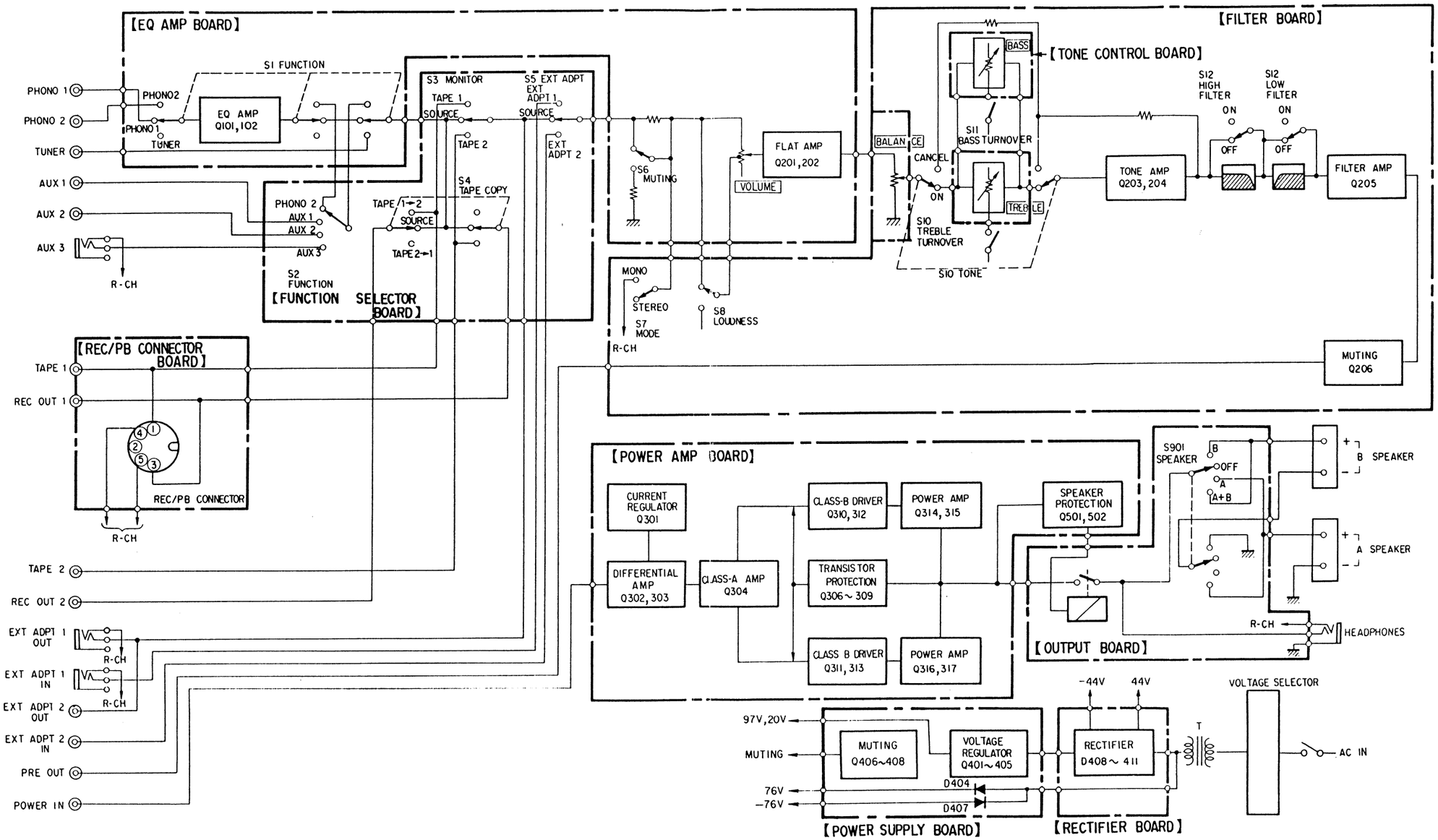


UK and AEP Models



Note: ※ UK Model: Serial No. 600,001 and later
AEP Model: Serial No. 500,001 and later

SECTION 1
BLOCK DIAGRAM



SECTION 2
ADJUSTMENT

Note: Turn the power switch on and allow about five minutes for warm-up the set.

2-1. 20 V POWER VOLTAGE ADJUSTMENT

With no input signal, adjust RT401 so that the emitter voltage of Q403 becomes 20 V.

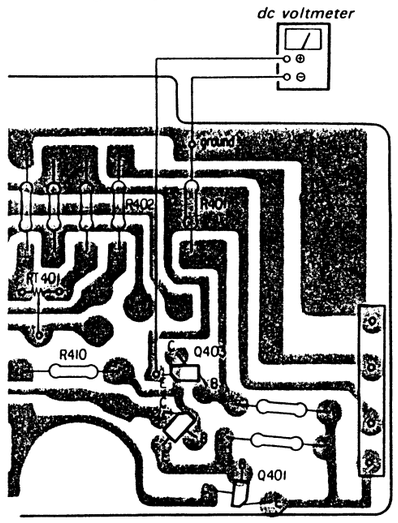


Fig. 2-1. 20 V power voltage adjustment

2-2. 97V POWER VOLTAGE CONFIRMATION

After 20 V power voltage adjustment, confirm that the emitter voltage of Q401 shows 97 V ±3 V.

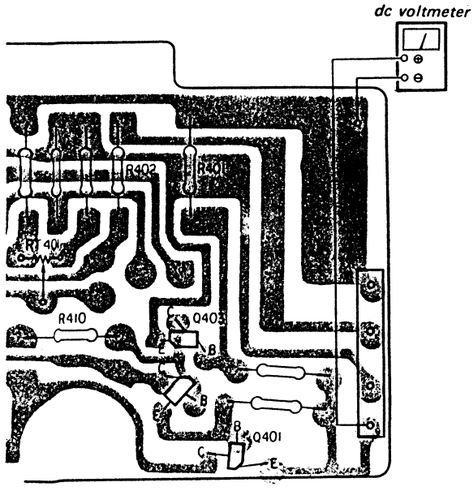


Fig. 2-2. 97V power voltage confirmation

2-3. CONFIRMATION OF DC BALANCE VOLTAGE

1. Set the SPEAKER switch to "A" position.
2. Connect the dc voltmeter across the SPEAKER OUT "A".
3. Confirm that the dc voltage at SPEAKER OUT "A" shows 0V ± 50 mV.

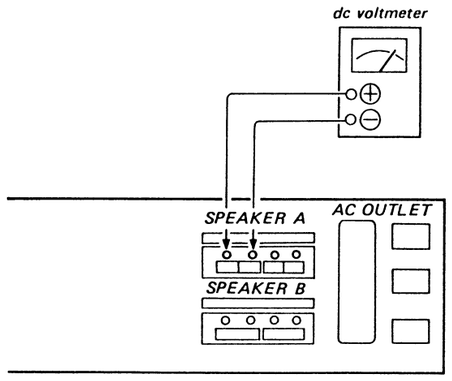


Fig. 2-3. Confirmation of dc balance voltage

2-4. DC BIAS ADJUSTMENT

Adjust RT301 and RT351 for 90 mV reading on the meter with no input signal.

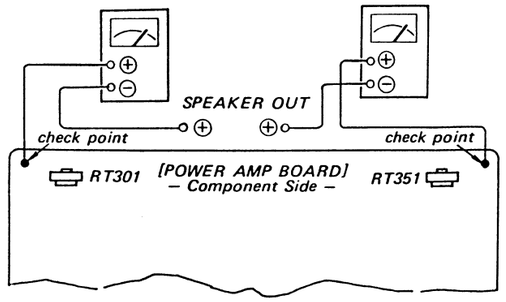


Fig. 2-4. DC bias adjustment

2-5. CHASSIS LAYOUT

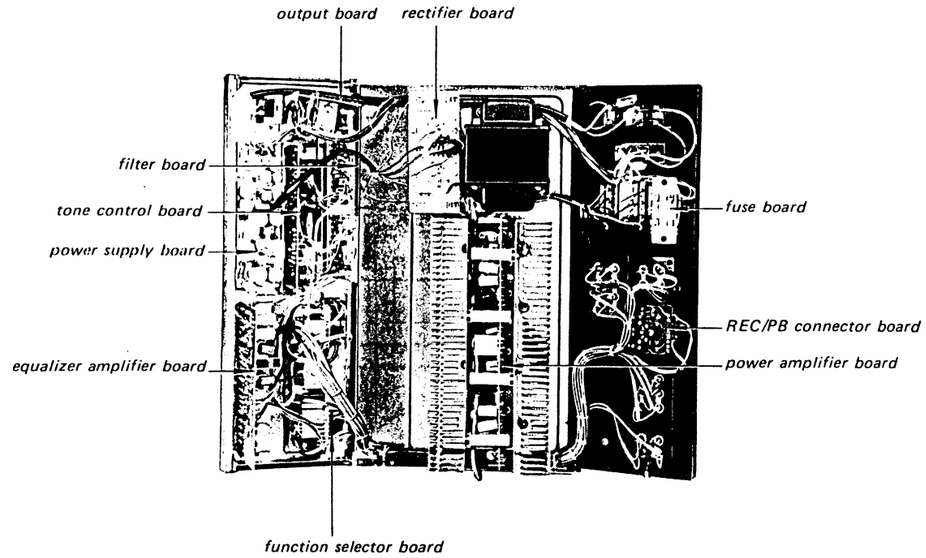
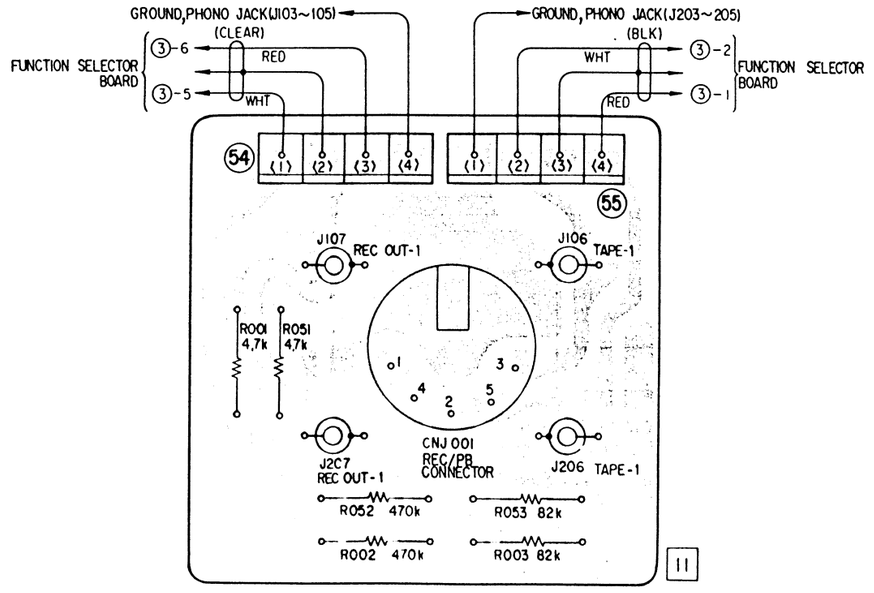


Fig. 2-5. Chassis layout

SECTION 3
MOUNTING AND SCHEMATIC DIAGRAMS

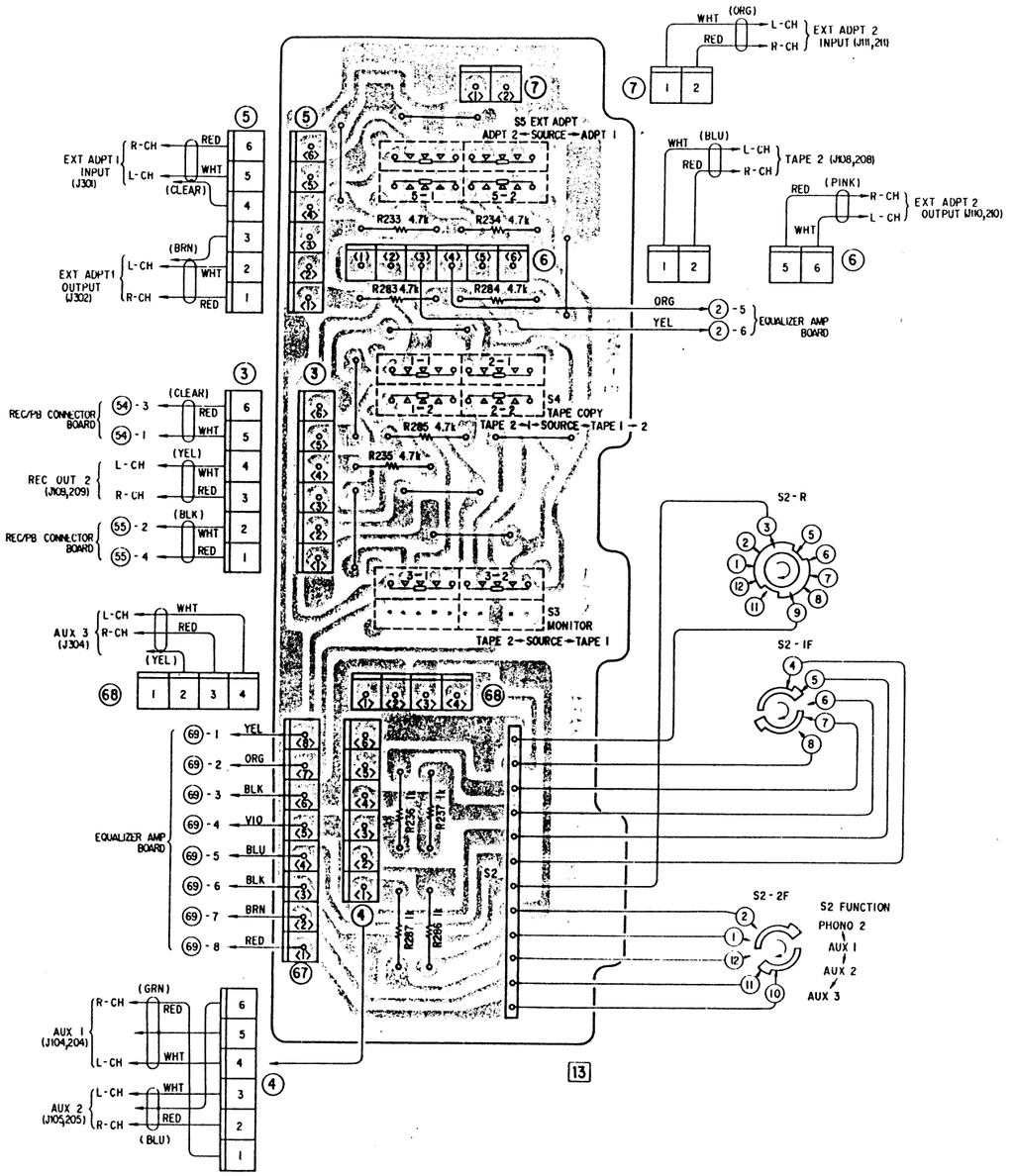
3-1. MOUNTING DIAGRAM – REC/PB CONNECTOR BOARD –

– Conductor Side –



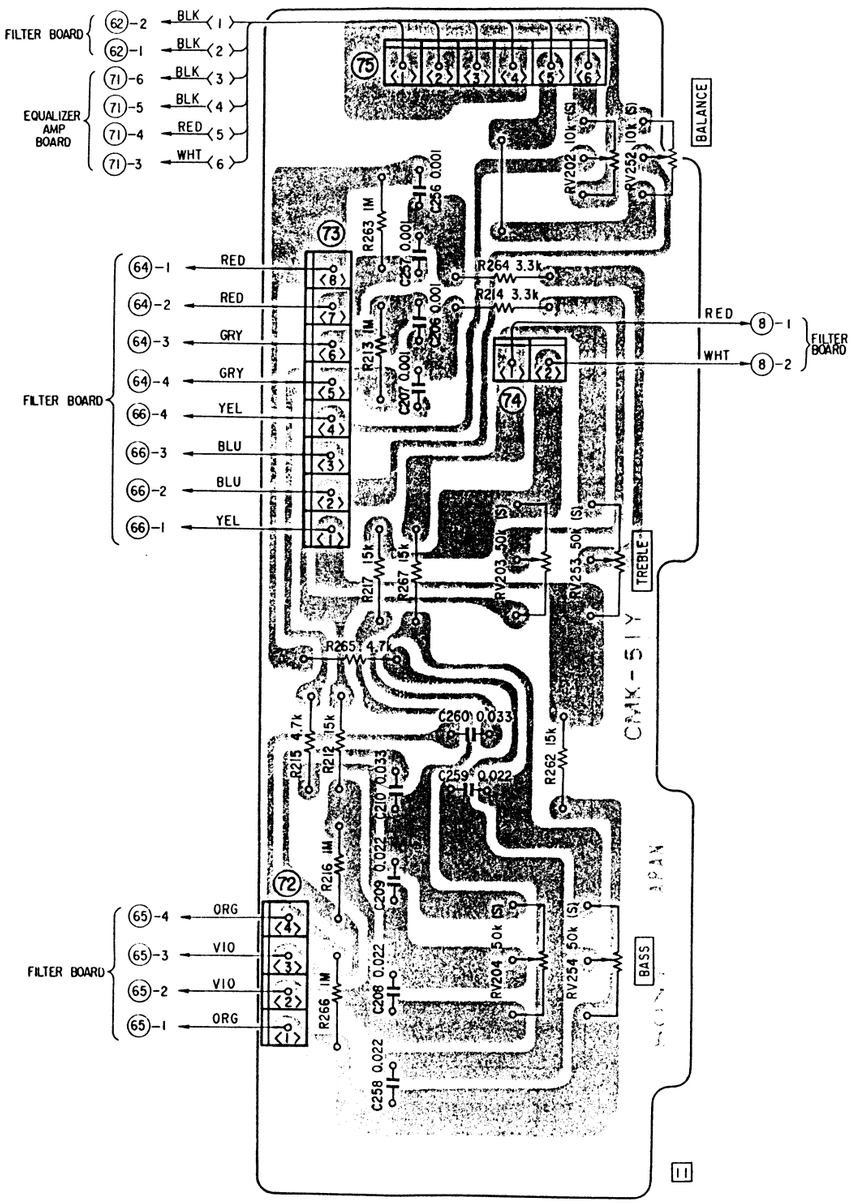
3-2. MOUNTING DIAGRAM – FUNCTION SELECTOR BOARD –

– Conductor Side –



3-3. MOUNTING DIAGRAM – TONE CONTROL BOARD –

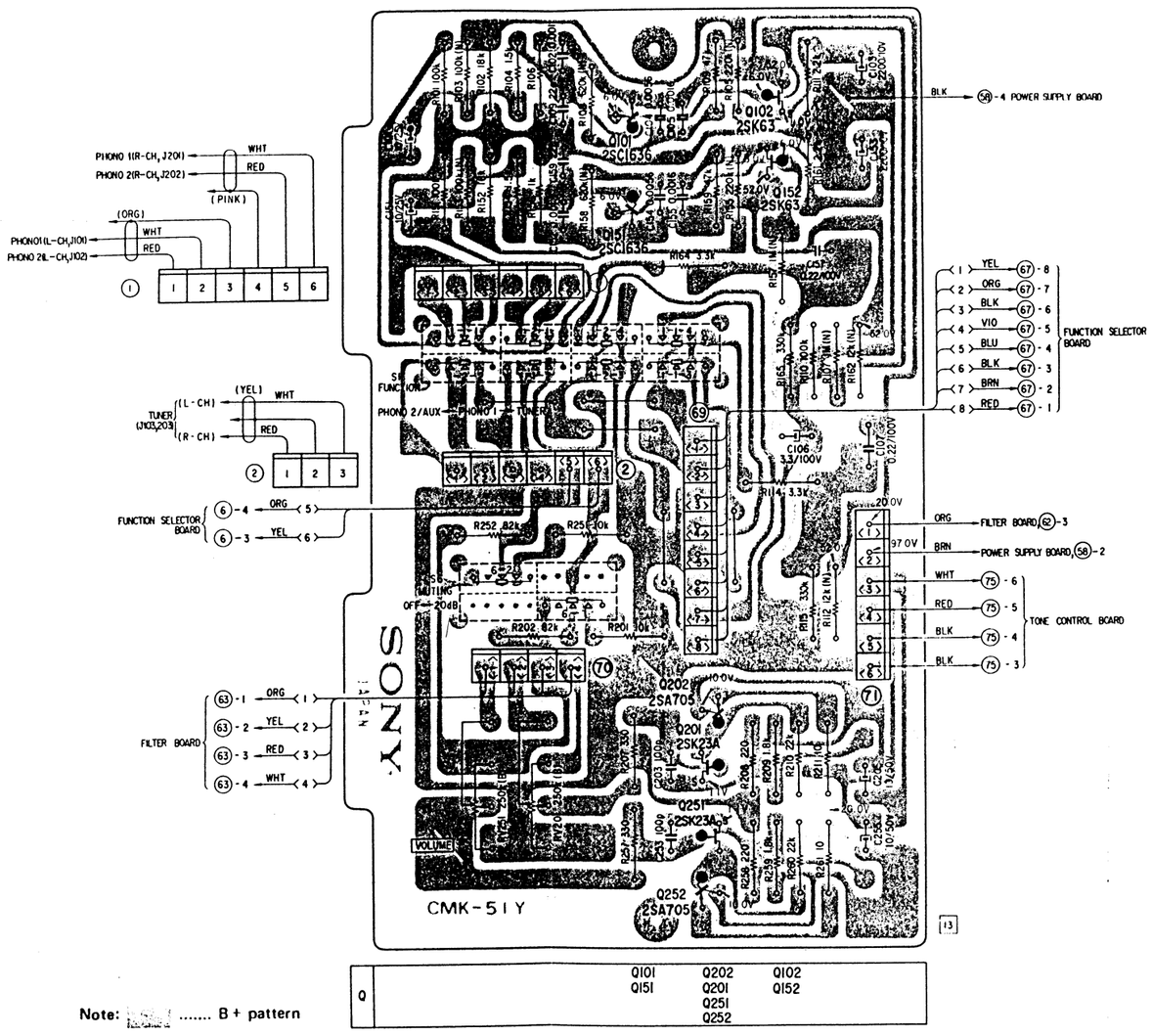
– Conductor Side –



3-4. MOUNTING DIAGRAM – EQUALIZER AMPLIFIER BOARD –

– Conductor Side –

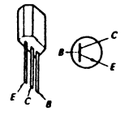
UK Model: Up to serial No. 600,350
AEP Model: Up to serial No. 501,900



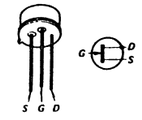
Q101 Q102 Q202
Q151 Q201
Q251
Q252
Q152

Note: ..... B + pattern

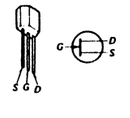
Q101, 151: 2SC1636



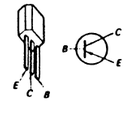
Q102, 152: 2SK63



Q201, 251: 2SK23A



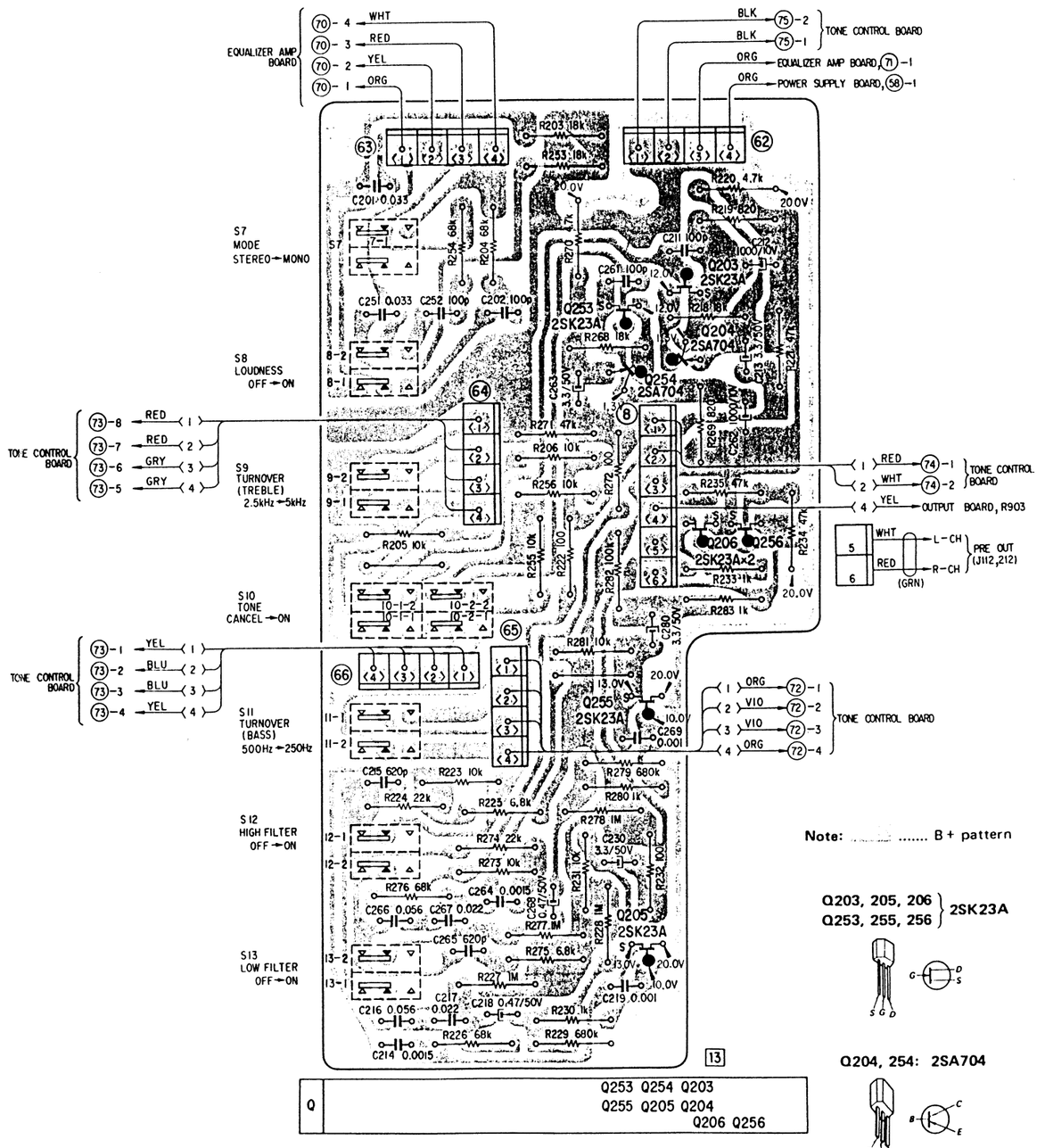
Q202, 252: 2SA705



3-5. MOUNTING DIAGRAM – FILTER BOARD –

– Conductor Side –

UK Model: Up to serial No. 600,350
AEP Model: Up to serial No. 501,900



Q253 Q254 Q203
Q255 Q205 Q204
Q206 Q256

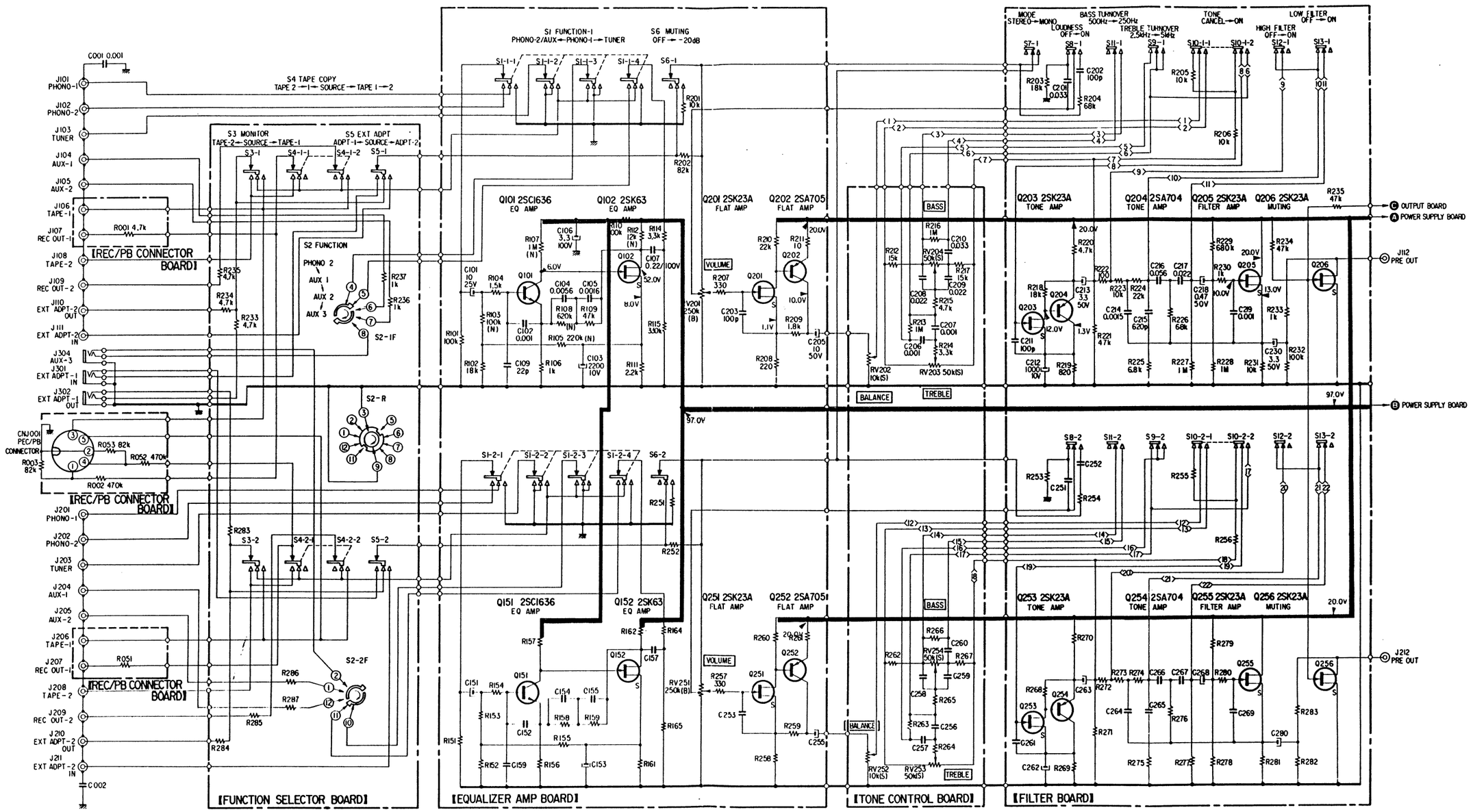
Note: ..... B + pattern

Q203, 205, 206 / Q253, 255, 256: 2SK23A

Q204, 254: 2SA704

3-6. SCHEMATIC DIAGRAM – PREAMPLIFIER SECTION –

UK Model: Up to Serial No. 600,350
AEP Model: Up to Serial No. 501,900



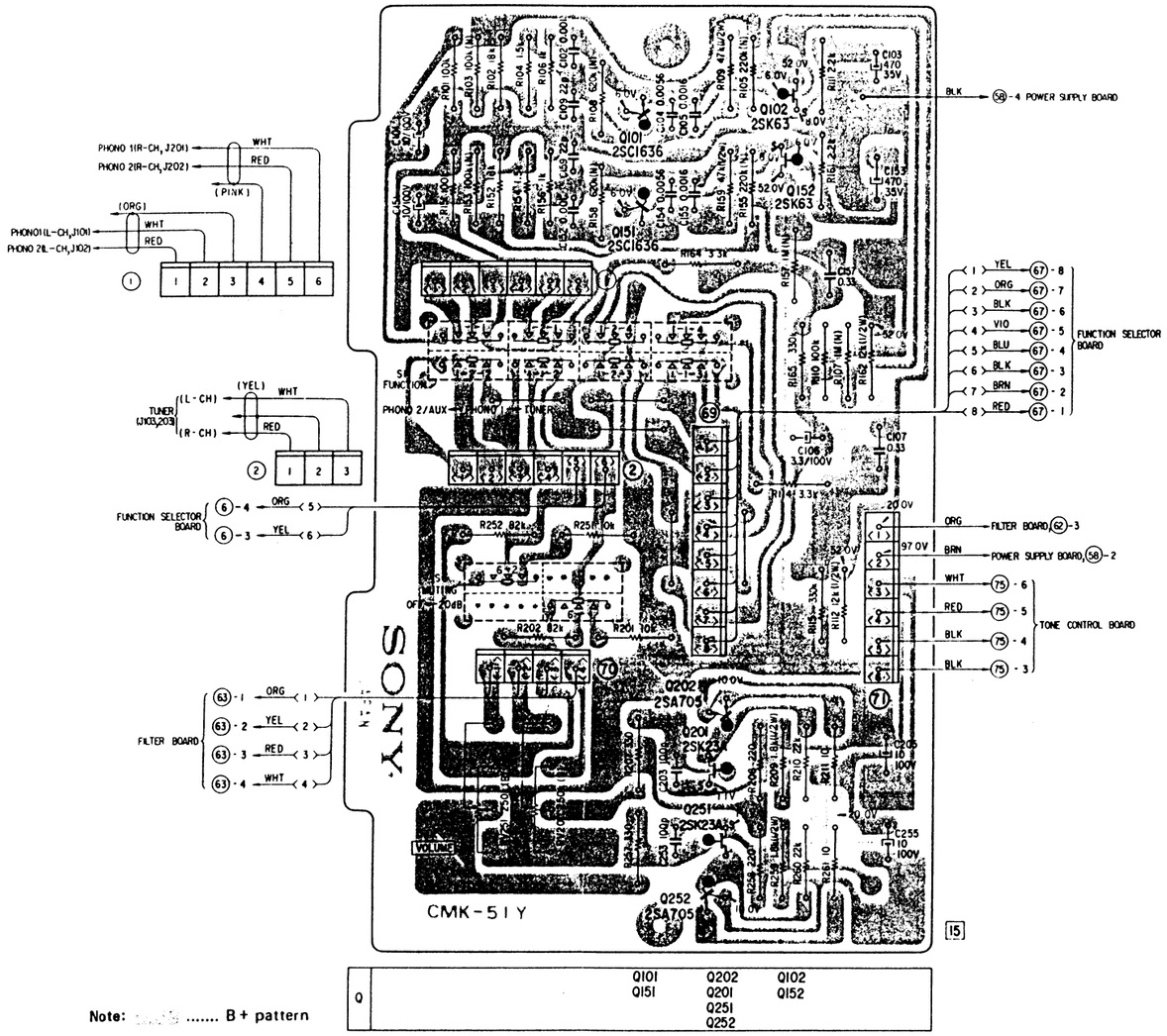
- S1----FUNCTION (PHONO 1)
- S2----FUNCTION (PHONO 2)
- S3----MONITOR (SOURCE)
- S4----TAPE COPY (SOURCE)
- S5----EXT ADPT (SOURCE)
- S6----MUTING (OFF)
- S7----MODE (STEREO)
- S8----LOUDNESS (OFF)
- S9----TREBLE TURNOVER (2.5kHz)
- S10---TONE (CANCEL)
- S11---BASS TURNOVER (500Hz)
- S12---HIGH FILTER (OFF)
- S13---LOW FILTER (OFF)

Note:
All resistance values are in ohms. k = 1,000, M = 1,000 k
All capacitance values are in μF except as indicated with p, which means μμF.
All voltages are dc measured with a VOM which has an input impedance of 20 k ohms/volt. No signal in.
Voltage variations may be noted due to normal production tolerances.

3-7. MOUNTING DIAGRAM – EQUALIZER AMPLIFIER BOARD –

– Conductor Side –

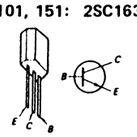
USA Model: Serial No. 800,001 and later
Canada Model: Serial No. 700,001 and later
UK Model: Serial No. 600,351 and later
AEP Model: Serial No. 501,901 and later



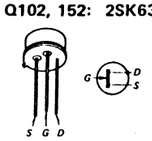
Q			
	Q101 Q151	Q202 Q201 Q251 Q252	Q102 Q152

Note: ..... B+ pattern

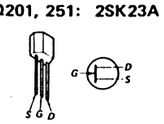
Q101, 151: 2SC1636



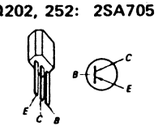
Q102, 152: 2SK63



Q201, 251: 2SK23A



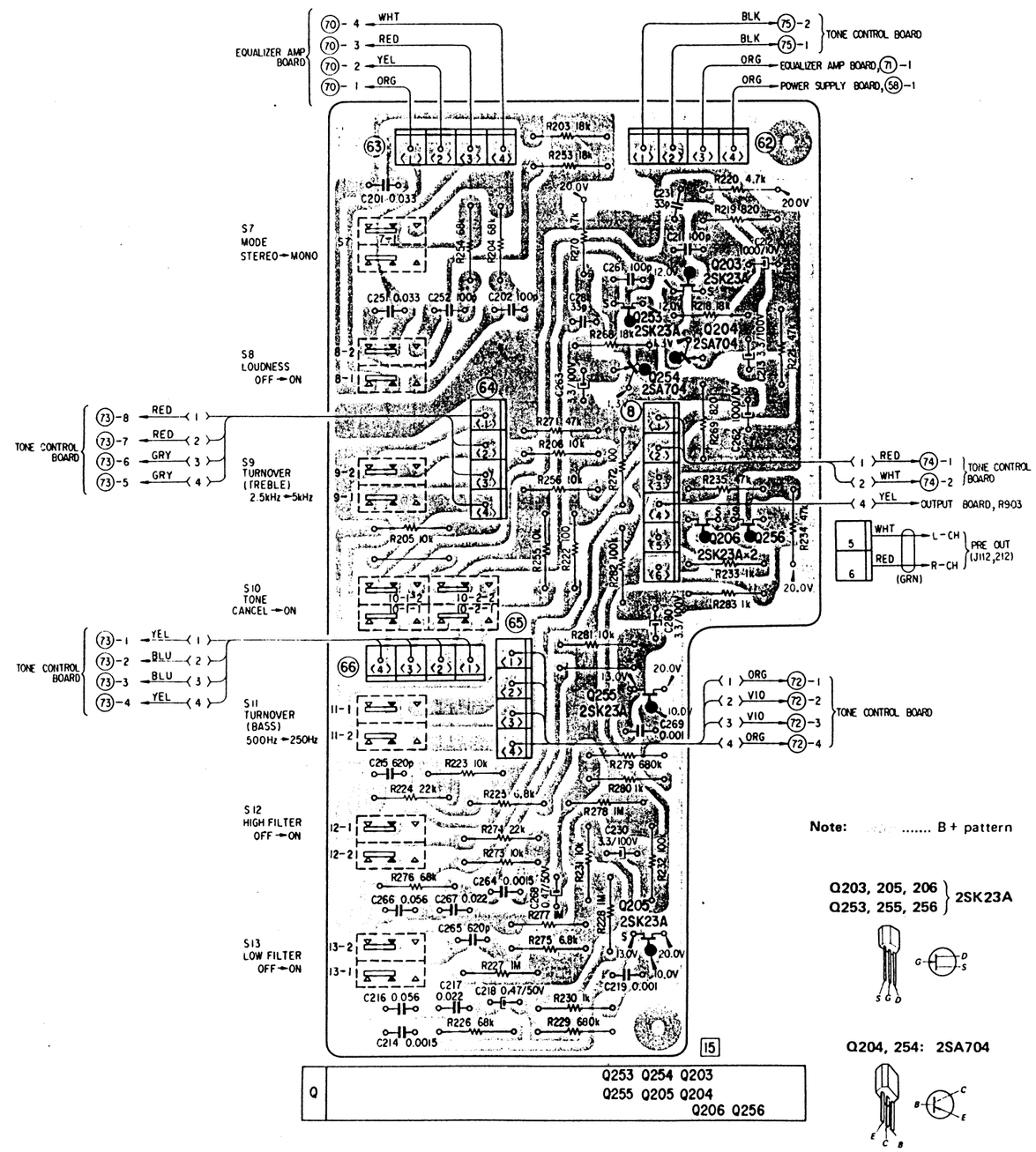
Q202, 252: 2SA705



3-8. MOUNTING DIAGRAM – FILTER BOARD –

– Conductor Side –

USA Model: Serial No. 800,001 and later
Canada Model: Serial No. 700,001 and later
UK Model: Serial No. 600,351 and later
AEP Model: Serial No. 501,901 and later



Q	
	Q253 Q254 Q203 Q255 Q205 Q204 Q206 Q256

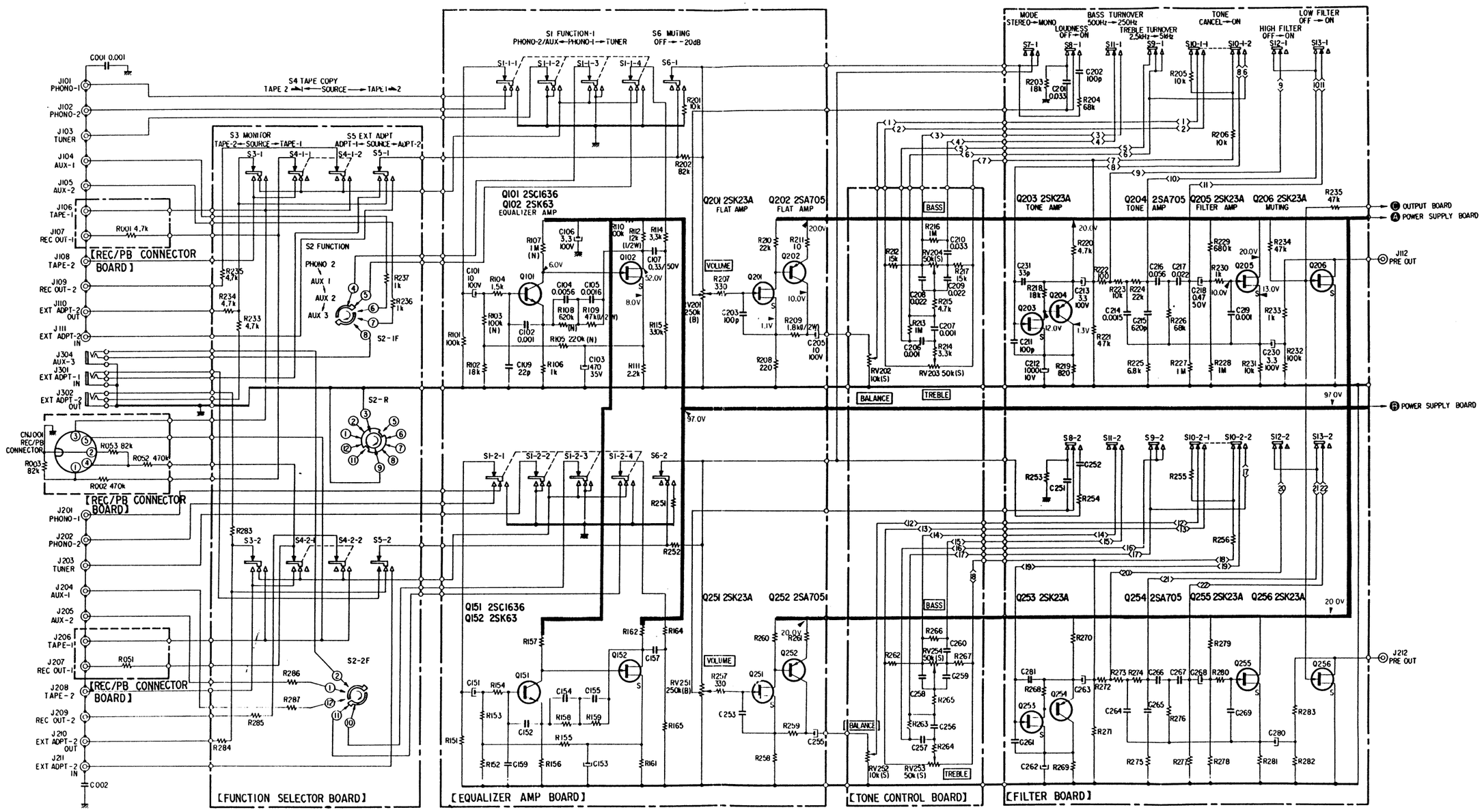
Note: ..... B+ pattern

Q203, 205, 206 / Q253, 255, 256: 2SK23A

Q204, 254: 2SA704

USA Model: Serial No. 800,001 and later
Canada Model: Serial No. 700,001 and later
UK Model: Serial No. 600,351 and later
AEP Model: Serial No. 501,901 and later

3-9. SCHEMATIC DIAGRAM – PREAMPLIFIER SECTION –



- S1----FUNCTION (PHONO 1)
- S2----FUNCTION (PHONO 2)
- S3----MONITOR (SOURCE)
- S4----TAPE COPY (SOURCE)
- S5----EXT ADPT (SOURCE)
- S6----MUTING (OFF)
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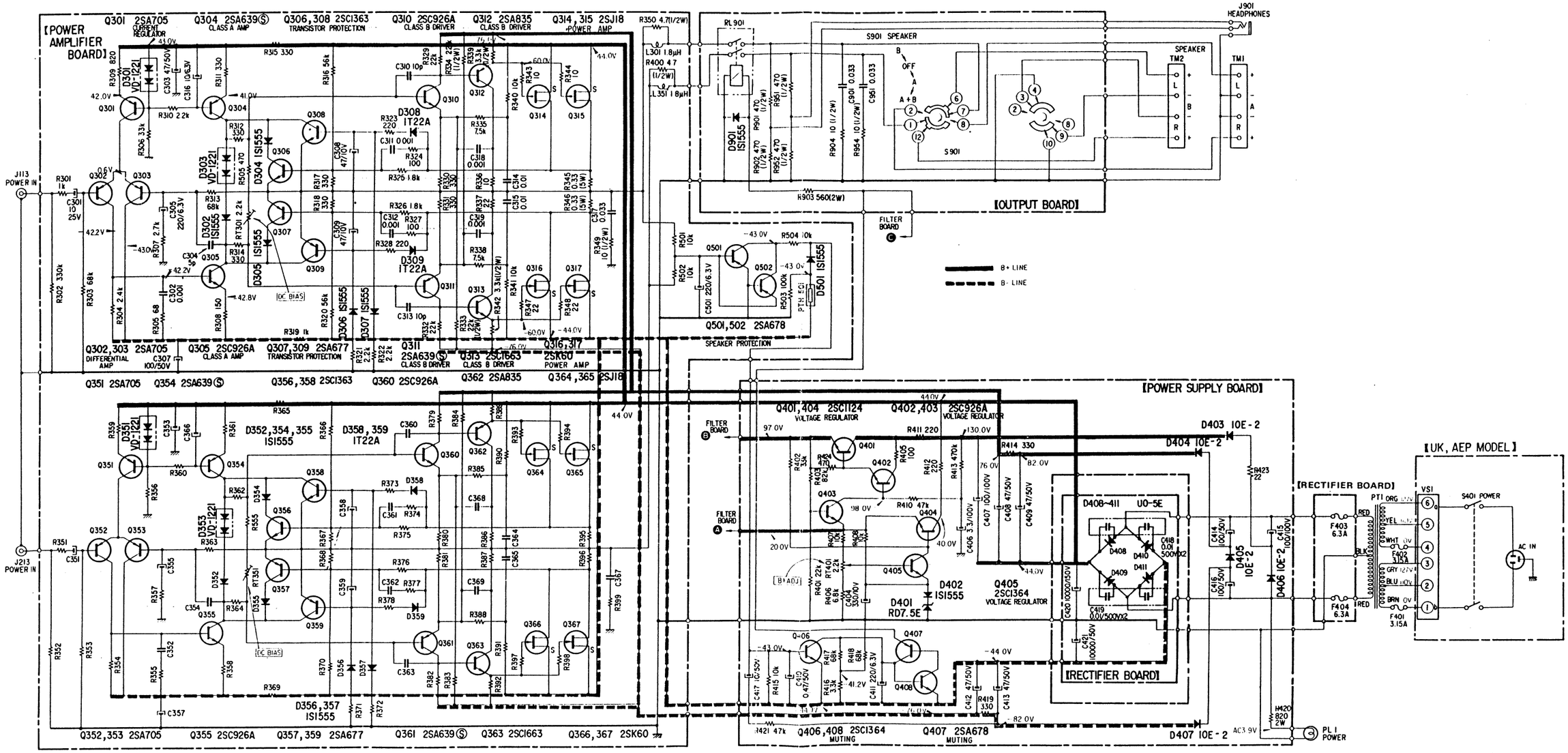
- S9----TREBLE TURNOVER (2.5kHz)
- S10---TONE (CANCEL)
- S11---BASS TURNOVER (500Hz)
- S12---HIGH FILTER (OFF)
- S13---LOW FILTER (OFF)

B+ LINE

Note:
All resistance values are in ohms. k = 1,000, M = 1,000 k
All capacitance values are in μF except as indicated with p, which means μμF.
All voltages are dc measured with a VOM which has an input impedance of 20 k ohms/volt. No signal in.
Voltage variations may be noted due to normal production tolerances.

3-10. SCHEMATIC DIAGRAM – POWER AMPLIFIER SECTION –

UK Model: Up to Serial No. 600,350
AEP Model: Up to Serial No. 501,900

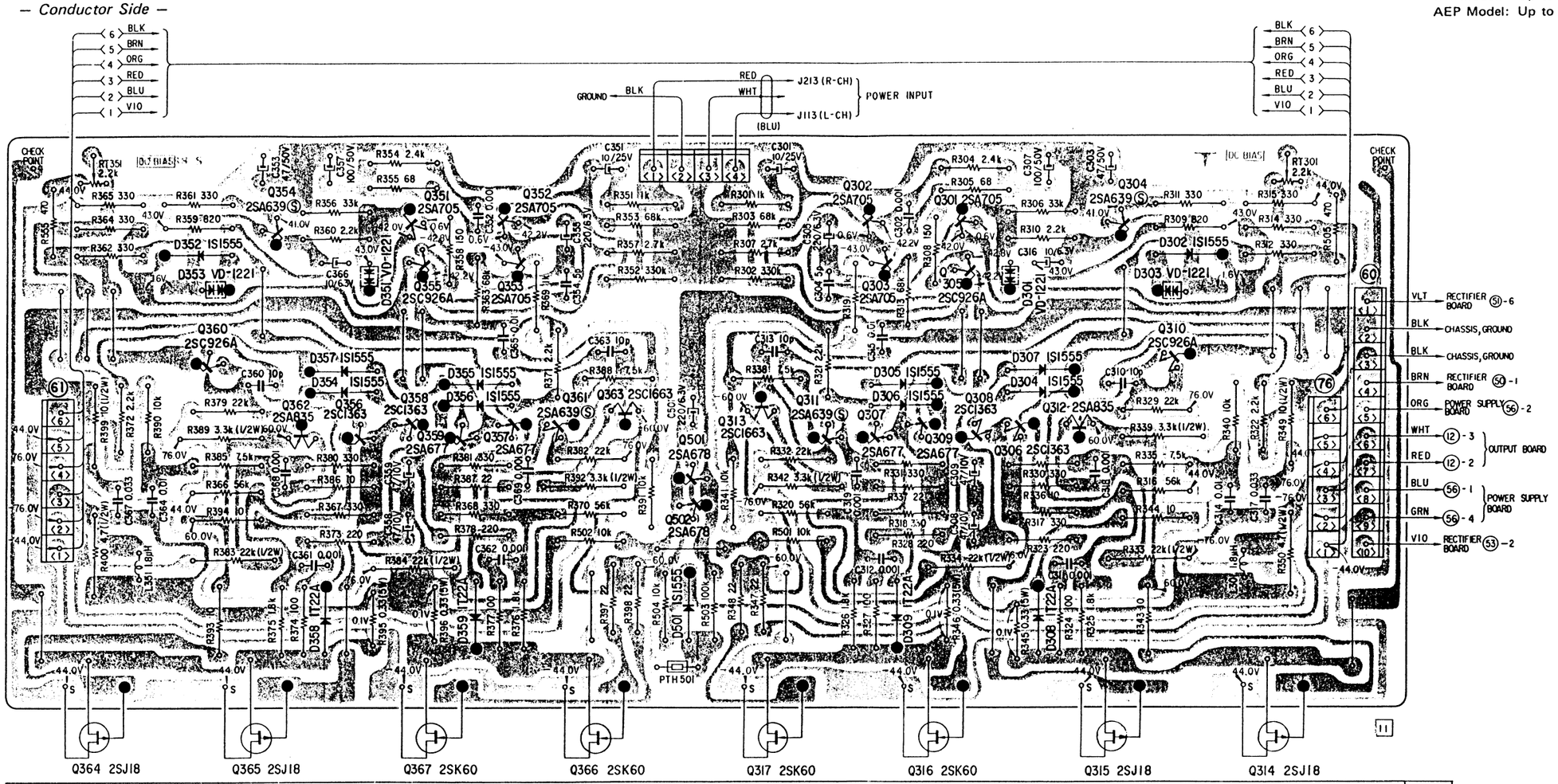


Note:
All resistance values are in ohms. k = 1,000, M = 1,000 k
All capacitance values are in μF except as indicated with p, which means μμF.
All voltages are dc measured with a VOM which has an input impedance of 20 k ohms/volt. No signal in.
Voltage variations may be noted due to normal production tolerances.

3-11. MOUNTING DIAGRAM – POWER AMPLIFIER BOARD –

– Conductor Side –

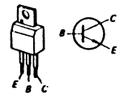
UK Model: Up to Serial No. 600,350
AEP Model: Up to Serial No. 501,900



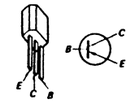
Q354 Q351 Q352 Q302 Q301 Q304 Q360 Q355 Q353 Q303 Q305 Q310 Q362 Q356 Q358 Q359 Q357 Q361 Q363 Q501 Q313 Q311 Q307 Q309 Q308 Q306 Q312 Q364 Q365 Q367 Q366 Q502 Q317 Q316 Q315 Q314	Q
D352 D351 D301 D353 D357 D355 D305 D307 D302 D354 D356 D306 D304 D303 D358 D359 D501 D309 D308	D

Note:
..... B+ pattern
..... B– pattern

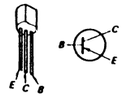
Q313, 363: 2SC1663



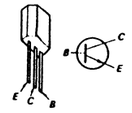
Q301 ~ 303, Q351 ~ 353 } 2SA705
Q307, 309, Q357, 359 } 2SA677
Q501, 502: 2SA678



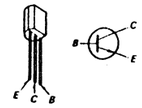
Q304, 311, Q354, 361 } 2SA639Ⓢ



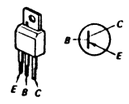
Q305, 310, Q355, 360 } 2SC926A



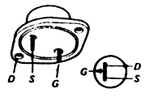
Q306, 308, Q356, 358 } 2SC1363



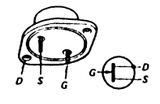
Q312, 362: 2SA835



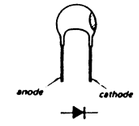
Q314, 315, Q364, 365 } 2SJ18



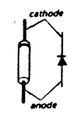
Q316, 317, Q366, 367 } 2SK60



D301, 303, D351, 353 } VD-1221



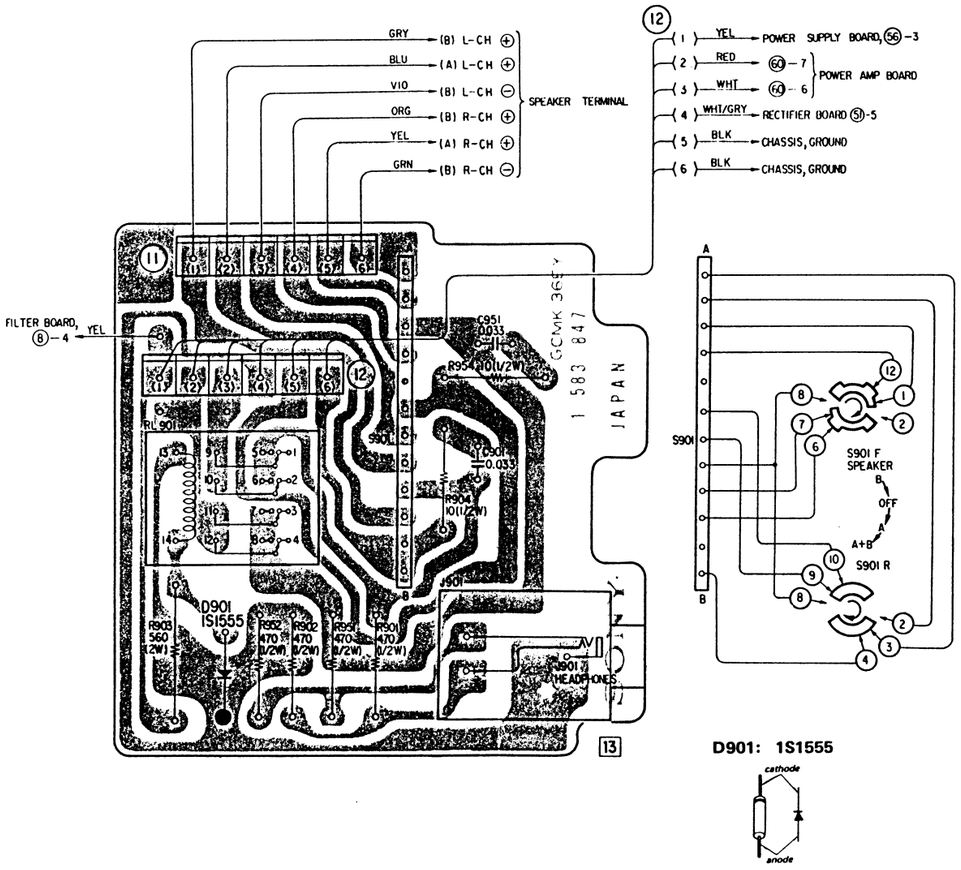
D308, 309, D358, 359 } 1T22A
D302, 352, D304 ~ 307, D354 ~ 357, D501 } 1S1555



3-12. MOUNTING DIAGRAM – OUTPUT BOARD –

– Conductor Side –

UK Model: Up to Serial No. 600,350
AEP Model: Up to Serial No. 501,900

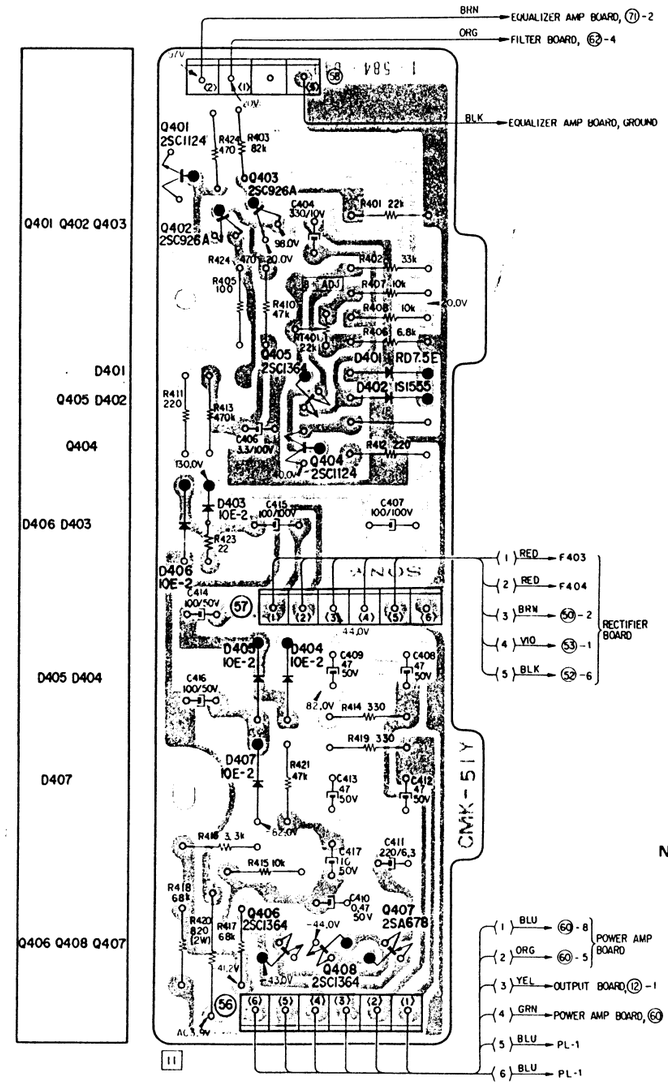


D901: 1S1555

3-13. MOUNTING DIAGRAM – POWER SUPPLY BOARD –

– Conductor Side –

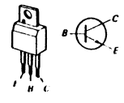
UK Model: Up to Serial No. 600,350
AEP Model: Up to Serial No. 501,900



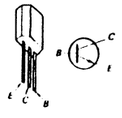
Note:

..... B + pattern
..... B – pattern

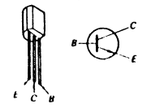
Q401, 404: 2SC1124



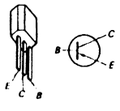
Q402, 403: 2SC926A



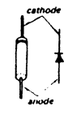
Q405, 406 Q408 } **2SC1364**



Q407: 2SA678

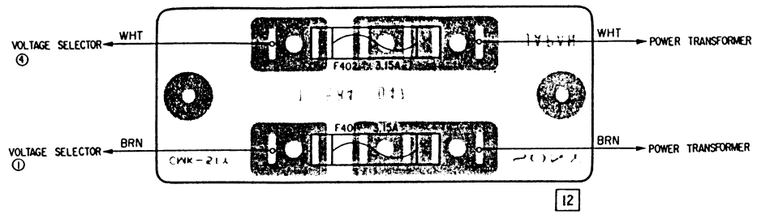


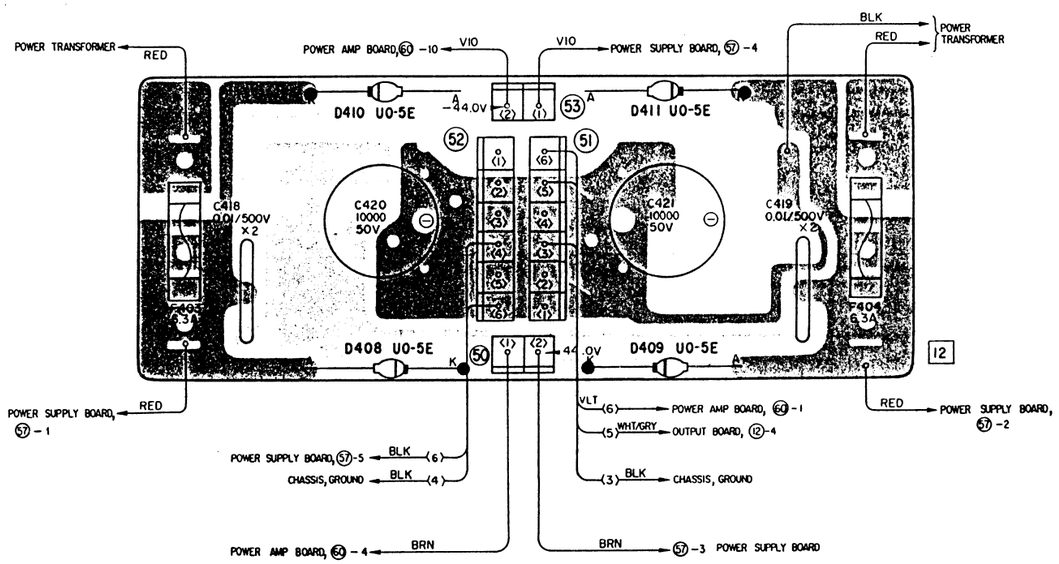
D401: RD-7.5E
D402: 1S1555
D403 ~ 407: 10E-2



3-14. MOUNTING DIAGRAM – RECTIFIER/FUSE BOARDS –

– Component Side –





D408, 409
D410, 411 } **UO-5E**

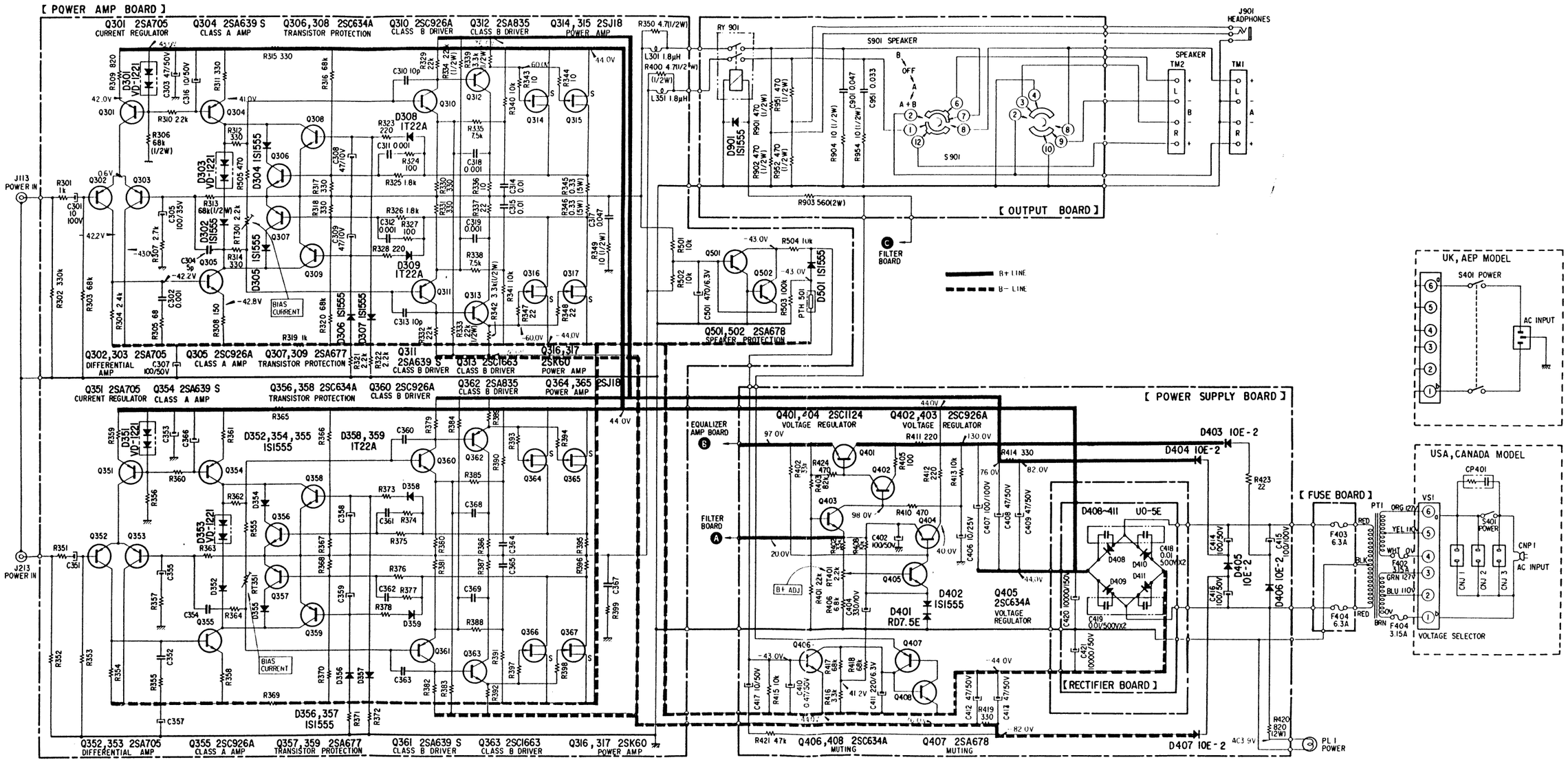
Note:

..... B + pattern
..... B – pattern

MEMO

3-15. SCHEMATIC DIAGRAM – POWER AMPLIFIER SECTION –

USA Model: Serial No. 800,001 and later
Canada Model: Serial No. 700,001 and later
UK Model: Serial No. 600,351 and later
AEP Model: Serial No. 501,901 and later

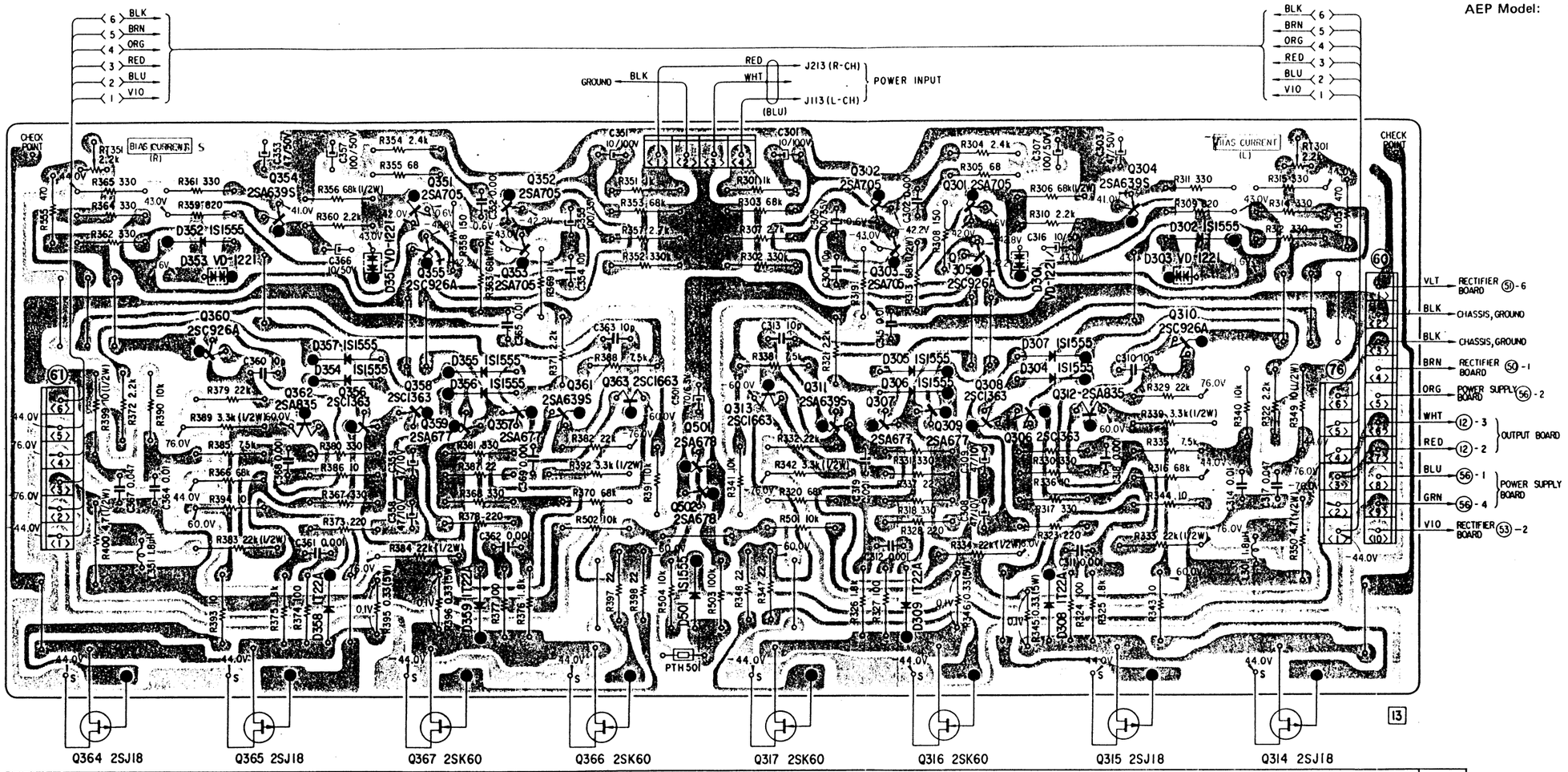


Note:
All resistance values are in ohms. k = 1,000, M = 1,000 k
All capacitance values are in μF except as indicated with p, which means μμF.
All voltages are dc measured with a VOM which has an input impedance of 20 k ohms/volt. No signal in.
Voltage variations may be noted due to normal production tolerances.

3-16. MOUNTING DIAGRAM – POWER AMPLIFIER BOARD –

– Conductor Side –

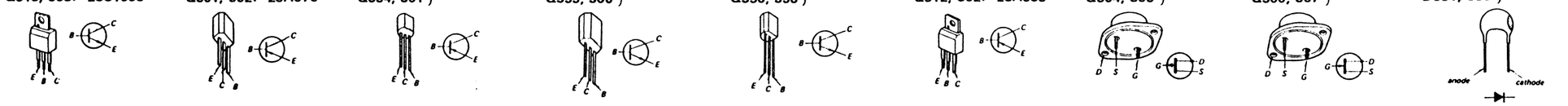
USA Model: Serial No. 800,001 and later
Canada Model: Serial No. 700,001 and later
UK Model: Serial No. 600,351 and later
AEP Model: Serial No. 501,901 and later



Q360 Q354 Q351 Q352 Q302 Q301 Q304 Q362 Q356 Q355 Q353 Q303 Q305 Q310 Q358 Q359 Q357 Q361 Q363 Q501 Q313 Q311 Q307 Q309 Q308 Q306 Q312 Q364 Q365 Q367 Q366 Q502 Q317 Q316 Q315 Q314	Q
D352 D351 D301 D353 D357 D355 D305 D307 D302 D354 D356 D306 D304 D303 D358 D359 D501 D309 D308	D

Note:
..... B+ pattern
..... B– pattern

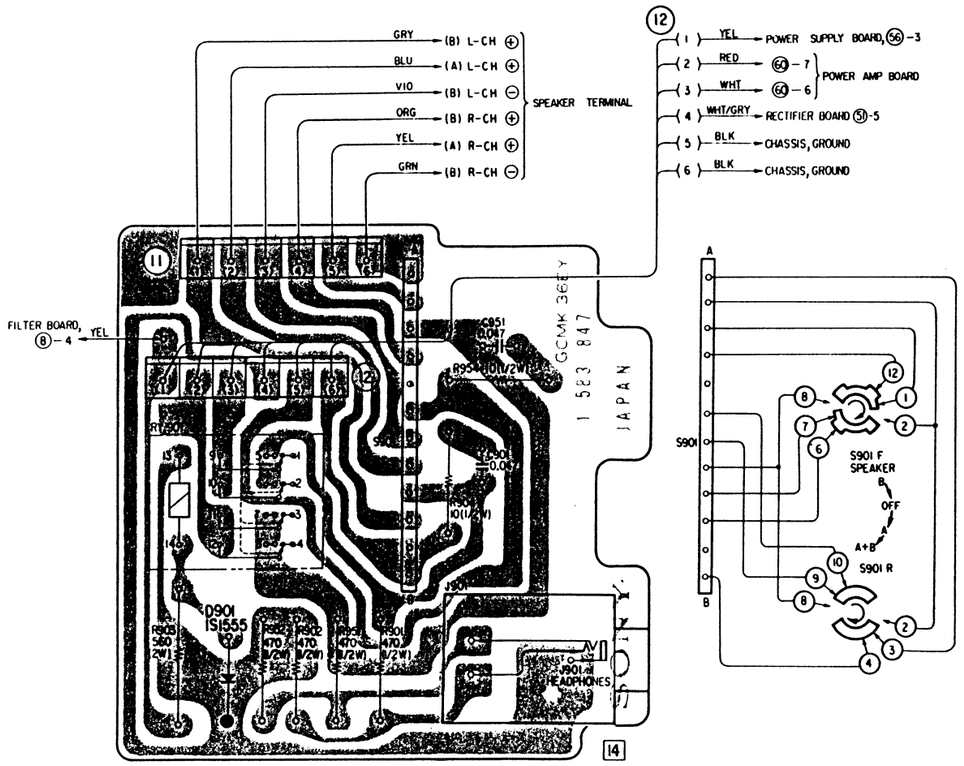
Q301 ~ 303, Q351 ~ 353 } 2SA705
Q307, 309, Q357, 359 } 2SA677
Q501, 502: 2SA678
Q313, 363: 2SC1663
Q304, 311, Q354, 361 } 2SA639Ⓢ
Q305, 310, Q355, 360 } 2SC926A
Q306, 308, Q356, 358 } 2SC1363
Q312, 362: 2SA835
Q314, 315, Q364, 365 } 2SJ18
Q316, 317, Q366, 367 } 2SK60
D301, 303, D351, 353 } VD-1221
D308, 309, D358, 359 } 1T22A
D302, 352, D304 ~ 307, D354 ~ 357, D501 } 1S1555



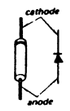
3-17. MOUNTING DIAGRAM – OUTPUT BOARD –

– Conductor Side –

USA Model: Serial No. 800,001 and later
Canada Model: Serial No. 700,001 and later
UK Model: Serial No. 600,351 and later
AEP Model: Serial No. 501,901 and later



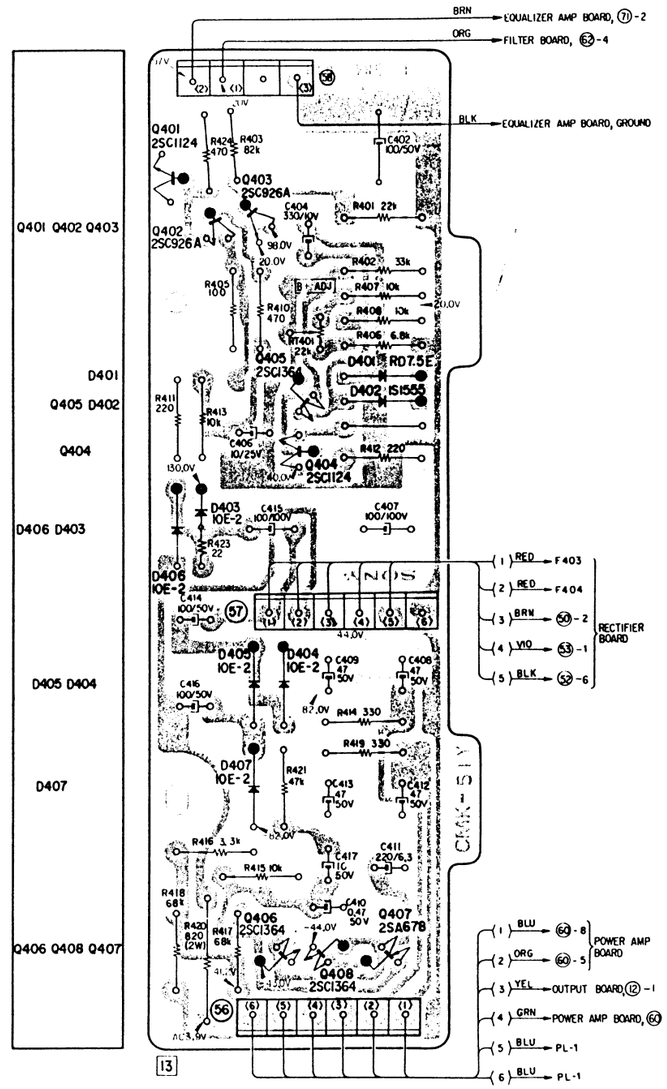
D901: 1S1555



3-18. MOUNTING DIAGRAM – POWER SUPPLY BOARD –

– Conductor Side –

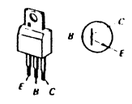
USA Model: Serial No. 800,001 and later
Canada Model: Serial No. 700,001 and later
UK Model: Serial No. 600,351 and later
AEP Model: Serial No. 501,901 and later



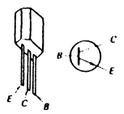
Note:

..... B + pattern
..... B – pattern

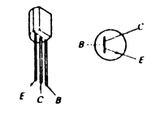
Q401, 404: 2SC1124



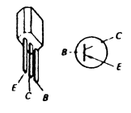
Q402, 403: 2SC926A



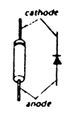
Q405, 406 } 2SC1364
Q408



Q407: 2SA678

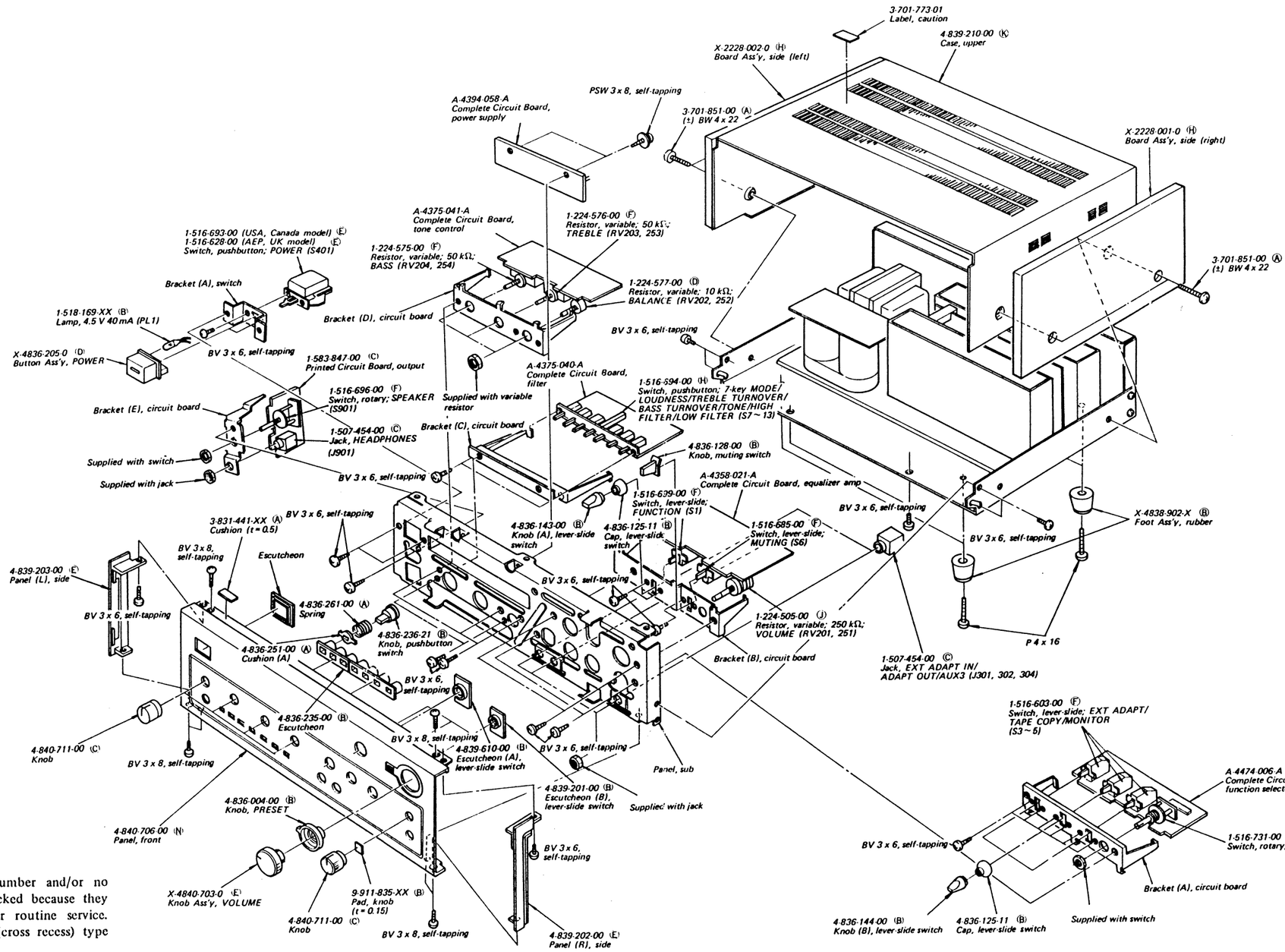


D401: RD-7.5E
D402: 1S1555
D403 ~ 407: 10E-2



SECTION 4
EXPLODED VIEWS

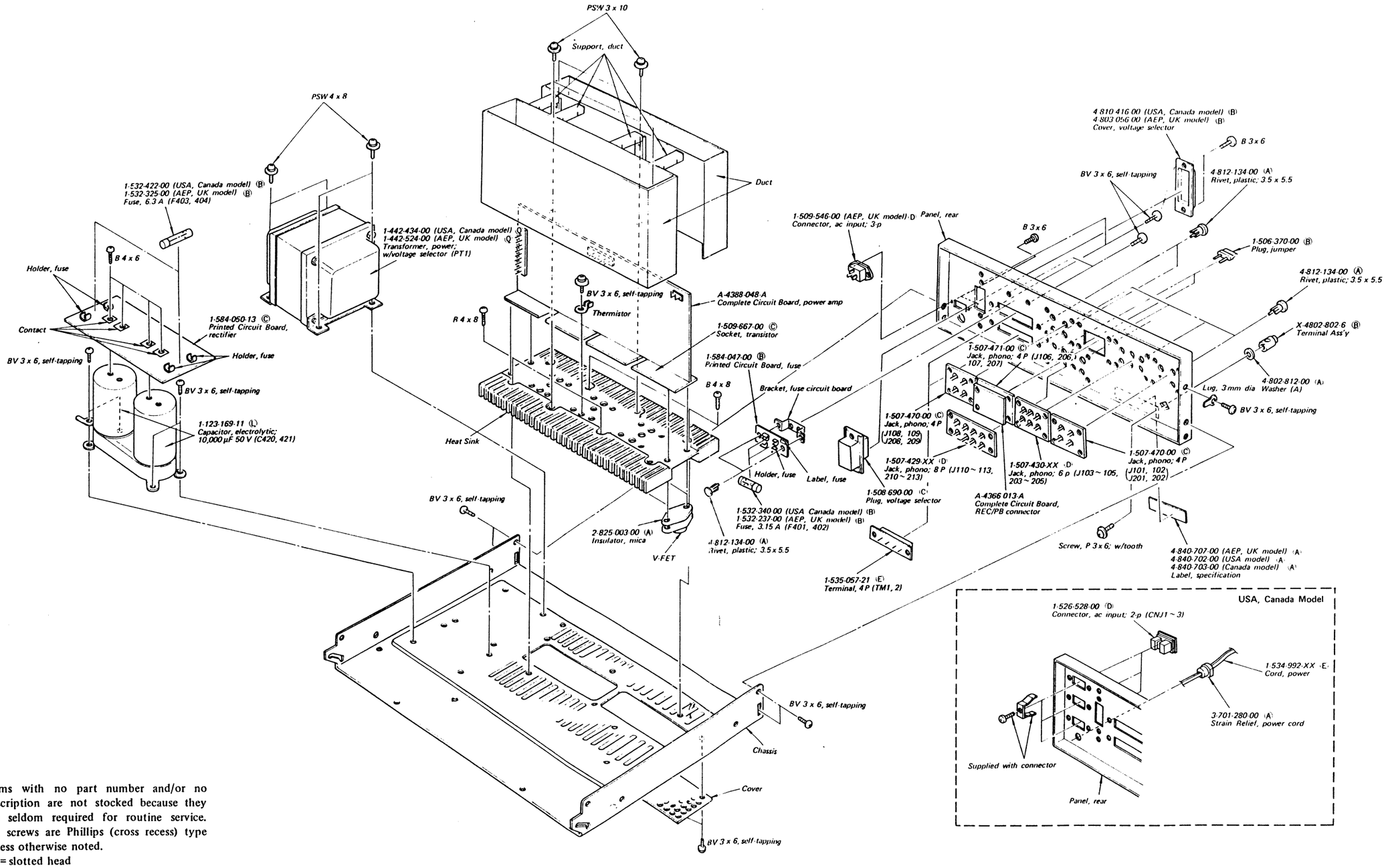
(1)



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (-) = slotted head
- The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

(2)



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

SECTION 5
ELECTRICAL PARTS LIST

Note: The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

Mark	Applicable Serial No.	
□	UK model:	Up to Serial No. 600,350
	AEP model:	Up to Serial No. 501,900
■	USA model:	Serial No. 800,001 and later
	Canada model:	Serial No. 700,001 and later
	UK model:	Serial No. 600,351 and later
	AEP model:	Serial No. 501,901 and later

Ref. No.	*Part No.*	*Description*
		COMPLETE CIRCUIT BOARDS
	A-4358-021-A	Equalizer Amp
	A-4366-013-A	REC/PB Connector
	A-4375-040-A	Filter
	A-4375-041A	TONE Control
	A-4388-048-A	Power Amp
	A-4394-058-A	Power Supply
	A-4474-006-A	Function Selector
		PRINTED CIRCUIT BOARDS
	1-583-847-00	Ⓒ Output
	1-584-047-00	Ⓑ Fuse
	1-584-050-13	Ⓒ Rectifier
		SEMICONDUCTORS
		Transistors
Q101,151		Ⓑ 2SC1636
Q102,152		Ⓔ 2SK63
Q201,251		Ⓒ 2SK23A
Q202,252		Ⓒ 2SA705
Q203,253		Ⓒ 2SK23A
Q204,254		Ⓒ 2SA705
Q205,255 Q206,256		Ⓒ 2SK23A
Q301~303 Q351~353		Ⓒ 2SA705
Q304,354		Ⓒ 2SA639S
Q305,355		Ⓓ 2SC926A
Q306,356		Ⓑ 2SC1364
Q307,357		Ⓒ 2SA677
Q308,358		Ⓑ 2SC1364
Q309,359		Ⓒ 2SA677
Q310,360		Ⓓ 2SC926A
Q311,361		Ⓒ 2SA639S
Q312,362		Ⓔ 2SA835
Q313,363		Ⓓ 2SC1663
Q314,364 Q315,365		Ⓚ 2SJ18
Q316,366 Q317,367		Ⓙ 2SK60
Q401		Ⓒ 2SC1124
Q402,403		Ⓓ 2SC926A
Q404		Ⓒ 2SC1124
Q405,406		Ⓑ 2SC1364
Q407		Ⓒ 2SA678
Q408		Ⓑ 2SC1364
Q501,502		Ⓒ 2SA678
		Diodes
D301,351		Ⓑ VD1221
D302,352		Ⓑ 1S1555
D303,353		Ⓑ VD1221
D304~307 D354~357		Ⓒ 1S1555
D308,358 D309,359		Ⓑ 1T22A
D401		Ⓑ RD7.5E
D402		Ⓑ 1S1555
D403~407		Ⓑ 10E-2
D408~411		Ⓒ U05E
D501,901		Ⓑ 1S1555
PTH501	1-800-340-21	Ⓑ Thermistor (positive)
		COIL
L301,351	1-407-592-00	Ⓐ Microinductor 1.8μH
		TRANSFORMER
PT1	1-442-434-00	Ⓠ Power (USA, Canada model)
PT1	1-442-524-00	Ⓠ Power (AEP, UK model)

Note: The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

Ref. No.	Part No.				Description
		CAPACITORS			
		All capacitors are in μF and electrolytic type unless otherwise indicated. 50 or less working volts are omitted except for electrolytic type. (p = μμF)			
C001,002	1-102-074-11	Ⓐ	0.001		ceramic
C101,151	□ 1-121-748-11	Ⓐ	10	25V	
	■ 1-121-126-11	Ⓐ	10	100V	
C102,152	1-108-227-12	Ⓐ	0.001		mylar
C103,153	□ 1-121-659-11	Ⓑ	2200	10V	
	■ 1-121-361-11	Ⓑ	470	35V	
C104,154	1-103-743-11	Ⓑ	0.0056		polystyrol
C105,155	1-103-730-11	Ⓐ	0.0016		polystyrol
C106	1-121-995-11	Ⓑ	3.3	100V	
C107,157	□ 1-105-729-12	Ⓐ	0.22	100V	mylar
	■ 1-108-822-12	Ⓐ	0.33	50V	mylar
C109,159	1-102-967-11	Ⓐ	22p		ceramic
C201,251	1-108-591-12	Ⓐ	0.033		mylar
C202,252 C203,253	1-102-973-11	Ⓐ	100p		ceramic
C205,255	□ 1-123-051-11	Ⓐ	10	50V	
	■ 1-121-126-11	Ⓐ	10	100V	
C206,256 C207,257	1-108-555-12	Ⓐ	0.001		mylar
C208,258 C209,259	1-108-587-12	Ⓐ	0.022		mylar
C210,260	1-108-591-12	Ⓐ	0.033		mylar
C211,261	1-102-973-11	Ⓐ	100p		ceramic
C212,262	1-121-736-11	Ⓑ	1000	10V	
C213,263	□ 1-121-914-11	Ⓑ	3.3	50V	
	■ 1-121-995-11	Ⓑ	3.3	100V	
C214,264	1-108-559-12	Ⓐ	0.0015		mylar
C215,265	1-103-720-11	Ⓐ	620p		polystyrol
C216,266	1-108-597-12	Ⓐ	0.056		mylar
C217,267	1-108-587-12	Ⓐ	0.022		mylar
C218,268	1-121-911-11	Ⓐ	0.47	50V	
C219,269	1-108-227-12	Ⓐ	0.001		mylar
C230,280	□ 1-121-914-11	Ⓑ	3.3	50V	
	■ 1-121-995-11	Ⓑ	3.3	100V	
C231,281	■ 1-102-963-11	Ⓐ	33p		ceramic
C301,351	□ 1-121-748-11	Ⓐ	10	25V	
	■ 1-121-126-11	Ⓐ	10	100V	
C302,352	1-108-227-12	Ⓐ	0.001		mylar
C303,353	1-123-058-11	Ⓐ	47	50V	
C304,354	1-102-807-11	Ⓐ	5p		ceramic
C305,355	□ 1-121-419-11	Ⓑ	220	6.3V	
	■ 1-121-357-11	Ⓑ	100	35V	
C307,357	1-123-059-11	Ⓑ	100	50V	
C308,358 C309,359	1-121-927-11	Ⓑ	47	10V	
C310,360	1-102-947-11	Ⓐ	10p		ceramic
C311,361 C312,362	1-108-227-12	Ⓐ	0.001		mylar
C313,363	1-102-947-11	Ⓐ	10p		ceramic
C314,364 C315,365	1-108-239-12	Ⓐ	0.01		mylar
C316,366	□ 1-121-469-11	Ⓐ	10	6.3V	
	■ 1-121-738-11	Ⓐ	10	50V	
C317,367	□ 1-108-244-12	Ⓐ	0.033		mylar
	■ 1-108-868-12	Ⓐ	0.047		mylar
C318,368 C319,369	1-108-227-12	Ⓐ	0.001		mylar
C402	■ 1-121-417-11	Ⓑ	100	50V	
C404	1-121-805-11	Ⓑ	330	10V	
C406	□ 1-121-995-11	Ⓐ	3.3	100V	
	■ 1-121-398-11	Ⓐ	10	25V	
C407	1-123-084-11	Ⓒ	100	100V	
C408,409	1-123-058-11	Ⓑ	47	50V	
C410	1-121-726-11	Ⓐ	0.47	50V	
C411	1-121-419-11	Ⓐ	220	6.3V	
C412,413	1-123-058-11	Ⓑ	47	50V	
C414	1-123-059-11	Ⓑ	100	50V	
C415	1-123-084-11	Ⓒ	100	100V	
C416	1-123-059-11	Ⓑ	100	50V	
C417	1-121-738-11	Ⓐ	10	50V	
C418,419	1-102-355-11	Ⓐ	0.01	500V	ceramic
C420,421	1-123-169-11	Ⓛ	10000	50V	
C501	□ 1-121-419-11	Ⓑ	220	6.3V	
	■ 1-123-077-11	Ⓑ	470	6.3V	
C901,951	□ 1-108-244-12	Ⓐ	0.033		mylar
	■ 1-108-868-12	Ⓐ	0.047		mylar

Note: The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

Ref. No.	Part No.	Description
		RESISTORS
		All resistors are in ohms. Regular type ±5%, ¼W carbon and composition resistors are omitted. Check the schematic diagram for the resistance values. (k = 1000, M = 1000 k)
R109,159	▪ 1-244-913-11	Ⓐ 47 k ½W carbon
R112,162	▪ 1-244-899-11	Ⓐ 12 k ½W carbon
R209,259	▪ 1-244-879-11	Ⓐ 1.8 k ½W carbon
R306,356	▪ 1-244-917-11	Ⓐ 68 k ½W carbon
R313,363	▪ 1-244-917-11	Ⓐ 68 k ½W carbon
R333,383 R334,384	1-244-905-11	Ⓐ 22 k ½W carbon
R339,389 R342,392	1-211-650-11	Ⓐ 3.3 k ½W carbon
R345,395 R346,396	1-217-157-11	Ⓐ 0.33 5W wire-wound
R349,399	1-211-590-11	Ⓐ 10 ½W carbon
R350,450	1-244-817-11	Ⓐ 4.7 ½W carbon
R420	1-206-662-11	Ⓐ 820 2W metal oxide
R901,951 R902,952	1-244-865-11	Ⓐ 470 ½W carbon
R903	1-206-658-11	Ⓐ 560 2W metal oxide
R904,905	1-211-590-11	Ⓐ 10 ½W carbon
RT301,351	1-224-489-00	Ⓑ 2.2 k adjustable
RT401	1-224-250-XX	Ⓒ 2.2 k adjustable
RV201,251	1-224-505-00	Ⓙ 250 k variable; VOLUME
RV202,252	1-224-577-00	Ⓓ 10 k variable; BALANCE
RV203,253	1-224-576-00	Ⓕ 50 k variable; TREBLE
RV204,254	1-224-575-00	Ⓕ 50 k variable; BASS
		SWITCHES
S1	1-516-699-00	Ⓕ Lever-slide, FUNCTION
S2	1-516-731-00	Ⓕ Rotary, FUNCTION
S3~5	1-516-603-00	Ⓕ Lever-slide, EXT ADAPT, TAPE COPY, MONITOR
S6	1-516-685-00	Ⓕ Lever-slide, MUTING
S7~13	1-516-694-00	Ⓗ Push, 7-key; MODE, LOUDNESS, TREBLE TURNOVER, BASS TURNOVER, TONE, HIGH FILTER, LOW FILTER
S401	1-516-628-00	Ⓔ Pushbutton, POWER (AEP, UK model)
	1-516-693-00	Ⓔ Pushbutton, POWER (USA, Canada model)
S901	1-516-696-00	Ⓕ Rotary, SPEAKER
		JACKS
CNJ001	1-509-549-00	Ⓑ Connector, REC/PB
CNJ1~3	1-526-528-00	Ⓓ Connector, ac; 2-p (USA, Canada model)
	1-509-546-00	Ⓓ Connector, ac; 3-p (AEP, UK model)
J101,201 J102,202	1-507-470-00	Ⓒ Phono, 4-p; PHONO 1, 2
J103~105 J203~205	1-507-430-XX	Ⓓ Phono, 6-p; TUNER, AUX 1, 2
J106,206 J107,207	1-507-471-00	Ⓒ Phono, 4-p; TAPE 1, REC OUT 1
J108,208 J109,209	1-507-470-00	Ⓒ Phono, 4-p; TAPE 2, REC OUT 2
J110~113 J210~213	1-507-429-XX	Ⓓ Phono, 8-p; EXT ADPT 2, PRE OUT, POWER IN
J301,302 J304	1-507-454-00	Ⓒ EXT ADAPT IN, ADAPT OUT, AUX 3
J901	1-507-454-00	Ⓒ HEADPHONES
		MISCELLANEOUS
CP401	1-231-057-31	Ⓑ Encapsulated Component (USA, Canada model)
F401,402	1-532-340-00	Ⓑ Fuse, 3.15 A (USA, Canada model)
	1-532-237-00	Ⓑ Fuse, 3.15 A (AEP, UK model)
F403,404	1-532-325-00	Ⓑ Fuse, 6.3 A (AEP, UK model)
	1-532-422-00	Ⓑ Fuse, 6.3 A (USA, Canada model)
PL1	1-518-169-XX	Ⓑ Lamp, 4.5 V 40 mA
RY901	1-515-257-00	Ⓗ Relay

Note: The circled letters (Ⓐ to Ⓩ) are applicable for European model only.

Ref. No.	*Part No.*	*Description*
TM1,2	1-535-057-21	Ⓔ Terminal, 4-p
	1-506-370-00	Ⓑ Plug, jumper
	1-508-690-00	Ⓒ Plug, voltage selector
	1-509-667-00	Ⓒ Socket, transistor
	1-534-992-XX	Ⓔ Cord, power (USA, Canada model)

ACCESSORIES

Ref. No.	*Part No.*	*Description*
	1-506-113-00	Ⓐ Plug, short
	1-534-819-11	Ⓔ Cord, power (UK model)
	1-534-754-12	Ⓔ Cord, power (E model)
	3-780-566-11	Ⓕ Manual, instruction (Canada, UK and AEP model)
	3-780-566-21	Ⓔ Manual, instruction (USA model)
	3-793-520-82	Ⓐ Card, guaranty (UK model)

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